

REMARKS

Claims 1-81 are pending in the present application. Claims 54-70 and 73-81 have been withdrawn following a restriction requirement. Claims 1-53 are hereby cancelled without prejudice, claim 71 is hereby amended, and new claims 82-101 are hereby added. Upon entry of this amendment, twenty two (22) claims (i.e., claims 71-72 and 82-101) will be pending, of which seven (7) are independent (i.e., claims 82 and 96-101). No new matter will be incorporated into the present application by entry of this Amendment. The Patent Office is hereby authorized and requested to charge any additional fees that may be required for entry of this Amendment to Deposit Account No. 061910.

Applicant's representatives would like to thank Examiners Blackwell-Rudasil and Turner for extending them the courtesy of a personal interview on 29 October 2003. This Amendment is being filed together with a recordation of the substance of the interview, in accordance with MPEP 713.04.

In the Office Action mailed 2 July 2003, the Examiner outlined the restriction requirement in the present application and requested affirmation of the provisional election made by telephone on 6 June 2003, noted that the oath or declaration previously filed in this case is defective and indicated that a new oath or declaration in compliance with 37 CFR 1.67(a) is required, requested that applicant check the specification for the presence of possible minor errors and requested applicant's cooperation in correcting any errors in the specification of which applicant may become aware, advised that should claim 5 be found allowable then claim 33 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof, advised that should claim 14 be found allowable then claim 28 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof, advised that should claim 15 be found allowable then claim 29 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof, rejected claims 1, 3-11, 13-18, 21-25, and 27-41 under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 5,302,449, Eby et al., and rejected claims 1-7, 12-18, 21-31, and 33-36 under 35 U.S.C. 102(e) as being anticipated by United States Patent Application Publication no. 2002/0176988, Medwick et al., rejected claims 1, 3-11, 13-25, 27-52, and 71-72 under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 4,952,430, Bowser et al., in view of United States Patent no. 5,302,449, Eby et al., with United States Patent Application Publication no. 2003/0039843, Johnson et al., used as an evidentiary reference, and rejected claims 1, 9-11, 42-48, 50-53, and 71-72 under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 4,952,430, Bowser et al., in view of United States Patent Application Publication no. 2002/0176988, Medwick et al. Applicant respectfully disagrees with each of these rejections, with the Examiner's characterization of the invention, and with the Examiner's characterization of the cited prior art.

The Examiner has outlined the restriction requirement in the present application and requested affirmation of the provisional election made by telephone on 6 June 2003. Applicant hereby affirms the provisional election, made with traverse, of the claims identified as Group I (i.e., claims 1-53 and 71-72).

The Examiner has noted that the oath or declaration previously filed in this case is defective and indicated that a new oath or declaration in compliance with 37 CFR 1.67(a) is required. Applicant shall provide a new oath or declaration in compliance with 37 CFR 1.67(a).

The Examiner has requested that applicant check the specification for the presence of possible minor errors and requested applicant's cooperation in correcting any errors in the specification of which applicant may become aware. Applicant has checked the specification and found no errors, but will undertake to correct any errors of which applicant may become aware.

The Examiner has advised that should claim 5 be found allowable then claim 33 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Since claims 5 and 33 are hereby canceled, applicant believes this issue is rendered moot.

The Examiner has advised that should claim 14 be found allowable then claim 28 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Since claims 14 and 28 are hereby canceled, applicant believes this issue is rendered moot.

The Examiner has advised that should claim 15 be found allowable then claim 29 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Since claims 15 and 29 are hereby canceled, applicant believes this issue is rendered moot.

The Examiner has rejected claims 1, 3-11, 13-18, 21-25 and 27-41 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent no. 5,302,449 to Eby et al. The Examiner has also rejected claims 1-7, 12-18, 21-31 and 33-36 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application No. 2002/0176988 to Medwick et al. Claims 1-53 have been cancelled without prejudice, thereby rendering moot the §102(b) and §102(e) rejections of these claims. Applicant, however, respectfully disagrees with these rejections and maintains that the cancelled claims are patentably distinct over the cited prior art. Accordingly, applicant reserves the right to pursue these cancelled claims in further prosecution.

The Examiner has rejected claims 1, 3-11, 13-25, 27-52 and 71-72 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,952,430 to Bowser et al. in view of Eby with U.S. Patent Application No. 2003/003983 to Johnson et al. used as an evidentiary reference. The Examiner has also rejected claims 1, 9-11 42-48, 50-53, and 71-72 under 35 U.S.C. §103(a) as being unpatentable over Bowser in view of Medwick. Claims 1-53 have been cancelled without prejudice, thereby rendering moot the §103(a) rejections to claims 1, 3-11, 13-25, and 27-53. Applicant, however, respectfully disagrees with these rejections and maintains that the cancelled claims are patentably distinct over the cited prior art. Accordingly, applicant reserves the right to pursue these cancelled claims in further prosecution.

Eby teaches a particular low-emissivity coating which in some embodiments includes as its outermost film an exceptionally thin abrasion-resistant overcoat comprising a metal oxide, such as zinc oxide, at an optical thickness of between about 10Å and about 40Å. For a metal oxide overcoat having a refractive index of about 2, this equates to a physical thickness of between about 5Å and about 20Å. (See Eby, column 8, lines 7-19).

Medwick teaches two different types of removable coatings. (See Medwick, page 7, paragraph [0055], lines 1-8). The first type is a polymeric coating. The second type is a carbon-containing coating. Medwick expressly indicates that both types of coatings would not survive glass tempering. With respect to the removable polymeric coating, Medwick states "Typical tempering ovens operate in the range of about 1200° F.-1300° F (648° C.-704° C.). At these temperatures, the polymeric protective coating 16 discussed above should thermally decompose or burn off the substrate 12." (See Medwick, page 7, paragraph [0053]). With respect to the removable carbon-containing coating, Medwick states "During tempering, the carbon-containing protective coating 16 would be oxidized and removed from the article 10." (See Medwick, page 8, paragraph [0057]).

Independent claim 82, and each of the claims depending therefrom (i.e., claims 83-95) calls for a substrate having a low-emissivity coating on one side and a temporary protective cover on the other side, wherein the temporary protective cover is durable to glass tempering. Applicant submits that the structure of these embodiments is clearly distinguishable from the structure that would result from any modification or combination involving Eby and Medwick.

As noted above, Eby shows a low-emissivity coating. In general, low-emissivity coatings are not used on the exposed external surfaces of a window. Rather, they are generally used on the protected internal surfaces of an IG unit. This is true, in particular, for the low-emissivity coatings that are taught in the Eby patent. These particular coatings would not be used on either of the unprotected external surfaces of an IG unit. Rather, they would be used on one of the protected interior surfaces of an IG unit. Therefore, Applicant submits it would not be obvious to make any combination or modification involving the Eby reference that would result in this low-emissivity coating being used in any position other than on one of the protected internal surfaces of an IG unit.

Even if the low-emissivity coating of Eby were positioned on the internal surface of a pane bearing on its external surface one of the protective coatings of Medwick, the resulting structure would be clearly distinguishable from the structure of the present claims. As noted above, neither of the coating types taught by Medwick are designed to survive glass tempering. Rather, Medwick teaches removable coatings that would burn off during tempering. Therefore, any combination of Eby and Medwick would fail to result in a substrate having a low-emissivity coating on one side and a temporary protective cover on the other side, where the temporary protective cover is durable to glass tempering. Accordingly, applicant submits that independent claim 82, and dependent claims 83-95, are inventive over the cited prior art.

Dependent claim 84 requires the temporary protective cover to have a thickness of less than about 100Å. This thickness range provides results that are entirely unexpected in view of Medwick. For example, providing the cover at a thickness of less than about 100Å yields a cover that can be washed away easily and entirely, without leaving portions of the cover on the substrate after washing. Thicker covers require longer washing times. Moreover, one must be careful to completely and uniformly remove thicker covers during the washing process. Similarly, when a thicker cover is used, washing is more likely to leave an irregular surface, retaining unremoved material from the cover. These irregular surfaces have been found to possess an undesirable wavy or blotchy appearance. Finally, it is difficult to determine when the

entire cover has been washed away if a thicker cover is used. (See applicant's specification, page 19, lines 8-16). Medwick teaches preferred thicknesses that are far greater than 100Å. For example, the preferred thickness of Medwick's removable polymeric coating is 1-2 microns, i.e., about 10,000-20,000Å (See Medwick, page 5, paragraph [0044]). Further, the preferred thickness of Medwick's carbon-containing coating is 300Å, i.e., three times the upper limit recited in claim 84 (See Medwick, page 7, paragraph [0055]). Therefore, Applicant submits that dependent claim 84 is patentable not only as depending from a patentable base claim, but also in its own right.

Dependent claim 85, independent claim 97, and independent claims 99-101 each require the temporary protective cover to have a thickness of at least about 25Å but less than about 100Å. As noted above, providing the cover at a thickness of less than about 100Å achieves unexpected results, e.g., in allowing the cover to be washed away easily and entirely. The bottom limit of the present claims also provides unexpected results that are particularly meaningful. For example, when provided at a thickness of at least about 25Å, the present cover has been found to be protective against silicone vapors and the like even *after* it has been tempered. This is borne out experimentally in Example 5 of applicant's specification. (See applicant's specification, page 54, lines 12-16). These results would be entirely unexpected in view of Medwick, which teaches preferred thicknesses that are far greater than 100Å. These results would also be unexpected in view of Eby, which teaches thicknesses of between about 5Å and about 20Å.

Claims 83 and 96 call for a temporary protective cover that is formed of inorganic material. Medwick does not teach a temporary cover formed of inorganic material. While Medwick indicates its coating can optionally include some organic and/or inorganic colorants, dyes, fluorescent dyes, or pigments (see Medwick, page 6, paragraph [0051]), this potential use of some inorganic colorant in the protective coatings of Medwick clearly is distinguishable from the case where the temporary protective cover is actually formed of inorganic material, as required in claims 83 and 96.

Similarly, claims 88 and 98-100 call for a temporary protective cover that is formed of a metal oxide selected from the group consisting of zinc oxide, bismuth oxide, cadmium oxide, iron oxide, and nickel oxide. Medwick does not teach a temporary cover formed of metal oxide. While Medwick mentions certain metal oxides that can optionally be used as colorants, this potential use of some metal oxide colorant in the protective coatings of Medwick clearly is distinguishable from the case where the temporary cover is actually formed of a metal oxide selected from the group consisting of zinc oxide, bismuth oxide, cadmium oxide, iron oxide, and nickel oxide, as required in claims 88 and 98-100.

Dependent claim 89 calls for a temporary protective cover comprising zinc oxide. Medwick does not provide any motivation whatsoever, much less any actual teaching or suggestion, for using any amount of zinc oxide in any of the protective coatings taught by Medwick. Therefore, applicant submits that dependent claim 89 is patentable not only as depending from a patentable base claim, but also in its own right.

Further, dependent claim 86 requires the substrate to be mounted in a position wherein the surface carrying the temporary protective cover is exposed to an outdoor environment. As noted above, low-emissivity coatings in general, and the low-emissivity coatings of Eby in particular, are not mounted in positions where they are exposed to outdoor environments. Therefore, applicant submits that dependent claim 86 is patentable not only as depending from a patentable base claim, but also in its own right.

Still further, dependent claim 87 requires the substrate to be part of an insulating glass unit wherein the surface carrying the low-emissivity coating is exposed to the protected environment of the IG unit's between-pane space, whereas the surface carrying the temporary cover is oriented away from the between-pane space. As noted above, low-emissivity coatings in general, and the low-emissivity coatings of Eby in particular, are not used on the unprotected external surfaces of IG units. Therefore, applicant submits that dependent claim 87 is patentable not only as depending from a patentable base claim, but also in its own right.

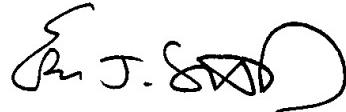
With respect to the §103(a) rejections of claims 71-72, applicant respectfully requests reconsideration. Claim 71 calls for a window pane having an exterior surface carrying the temporary protective cover, and a window frame to which the pane is secured by a bead of sealant, the bead of sealant being bonded on a first side directly to a peripheral portion of the protective cover, the bead of sealant being bonded on a second side to the window frame.

A benefit of the present covers is that they can be adhered directly and permanently to window sealant. For example, a pane bearing the present cover can be installed in a window frame without first having to remove the temporary protective cover. This is advantageous in that it allows the whole cover to stay on the window until all the painting and other construction around the window has been completed. At this point, after the greatest risk of window contamination has passed, the cover can be removed from the central area of the window (e.g., from the window's vision area), leaving a peripheral portion of the cover permanently on the window (e.g., beneath the sealant and the window frame). This clearly would not be done in Medwick or Eby.

Medwick teaches a temporary coating that is removed (e.g., during tempering) before the coated substrate is installed in a window frame. Medwick does not teach or suggest any embodiment wherein its removable coating is left on the substrate following installation. Nor is there any reason to believe the removable coating of Medwick would be suitable for being sealed directly and permanently to a window frame. Further, the low-emissivity coating of Eby would not be used in a position where it would be adhered directly and permanently to a window frame. Finally, the very general teachings of the other cited references do not provide any motivation for modifying the Medwick or Eby references in any manner that would involve the cover being left on the substrate and sealed directly to a window frame. Thus, applicant submits that claims 71-72 are inventive over any combination of the applied prior art.

In view of the foregoing remarks and/or amendments, applicant submits that claims 71-72 and 82-101 are in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested. The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance the prosecution of this case.

Respectfully submitted,



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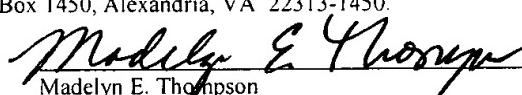
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